

## LINNEA-90

~90° + 90° wide beam optimized for 1.0 mm metal sheet or profile. Variant made from PC.

### SPECIFICATION:

Dimensions	285.0 x 40.0 mm
Height	9.5 mm
Fastening	clips
ROHS compliant	yes ⓘ

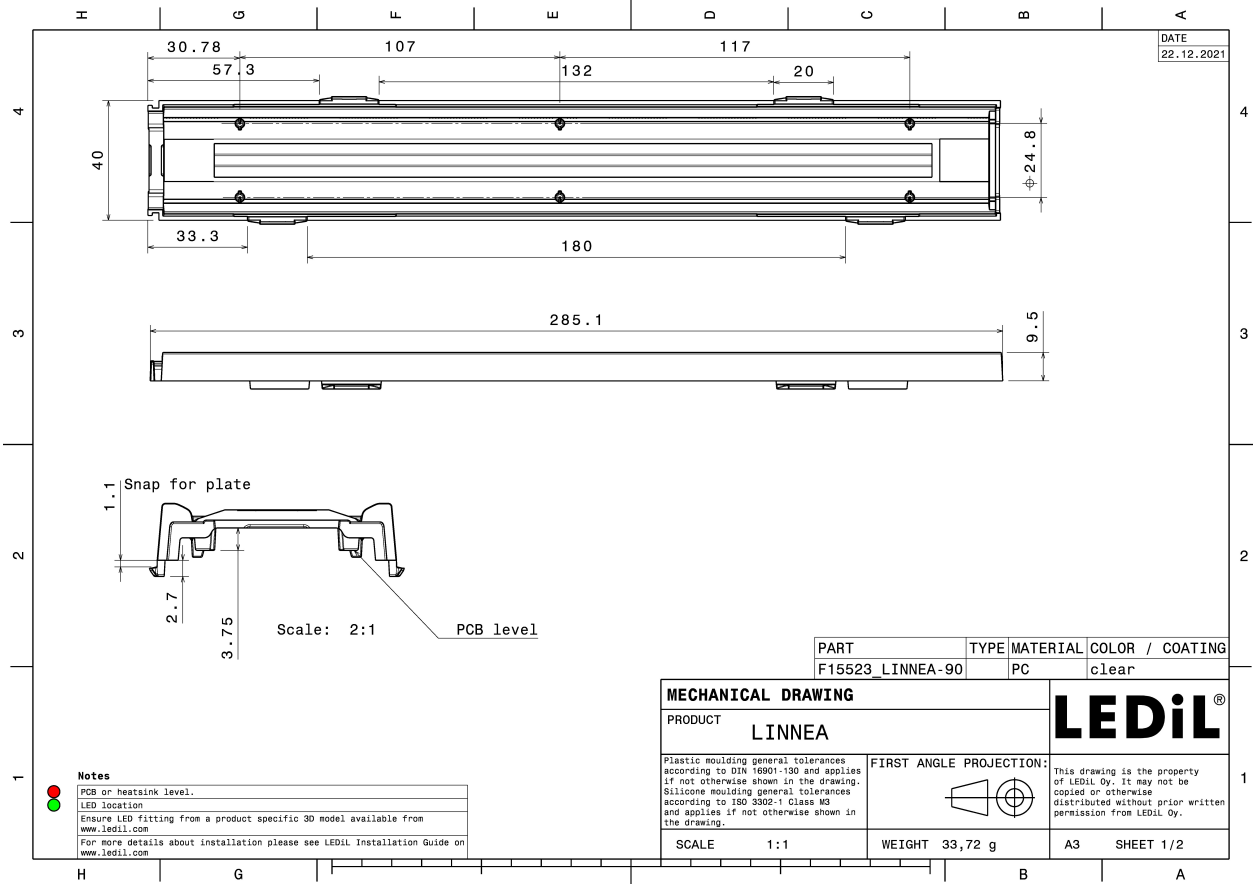
### MATERIALS:

Component	Type	Material	Colour	Finish
LINNEA-90	Linear lens	PC	clear	

### ORDERING INFORMATION:

Component	Qty in box	MOQ	MPQ	Box weight (kg)
F15523_LINNEA-90 » Box size: 398 x 298 x 265 mm	162	36	36	7.3



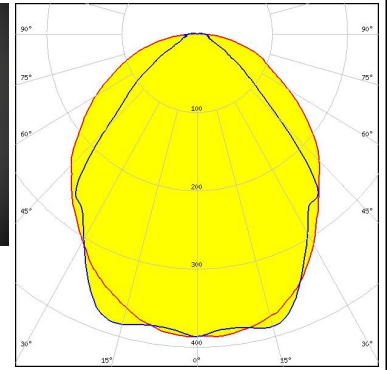
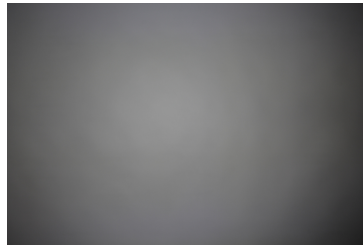


See also our general installation guide: [www.ledil.com/installation\\_guide](http://www.ledil.com/installation_guide)

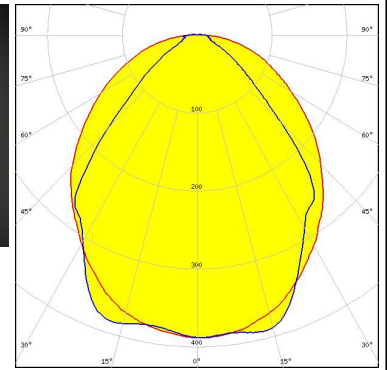
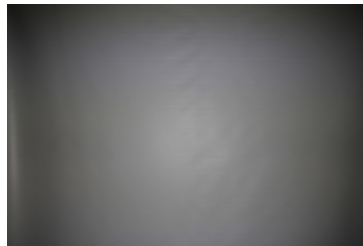
#### OPTICAL RESULTS (MEASURED):



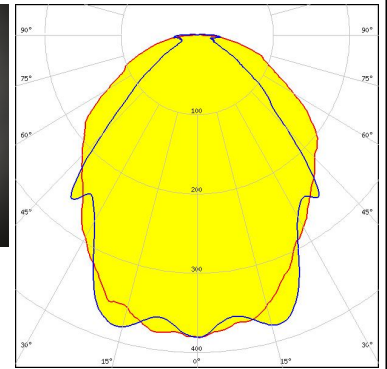
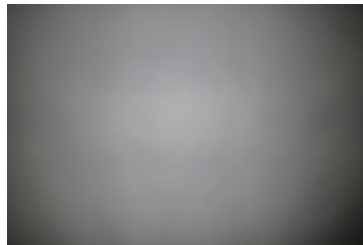
LED CALOSNU405-M7W1  
 FWHM / FWTM 104.0 + 87.0° / 164.0 + 124.0°  
 Efficiency 82 %  
 Peak intensity 0.4 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



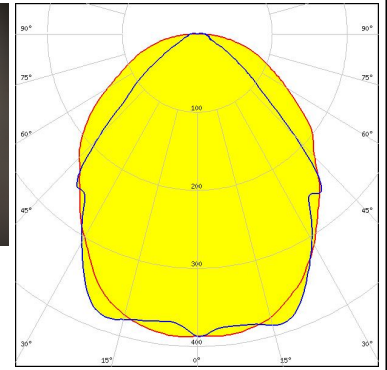
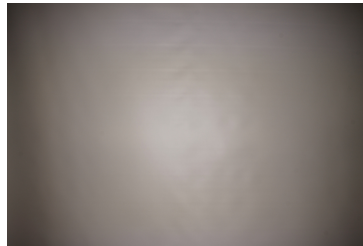
LED CALOSNU410-M7W1  
 FWHM / FWTM 104.0 + 86.0° / 164.0 + 124.0°  
 Efficiency 83 %  
 Peak intensity 0.4 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:




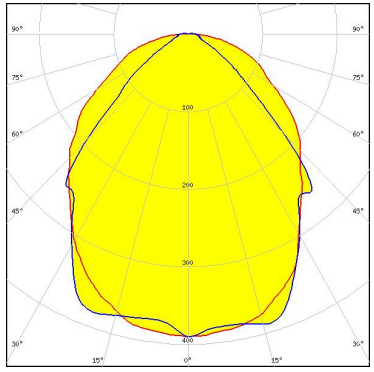

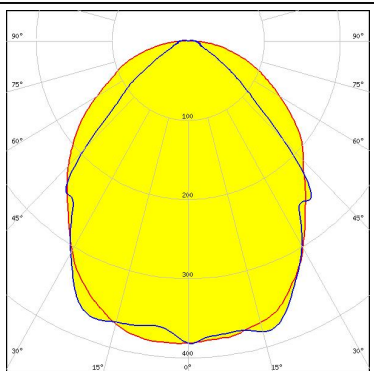

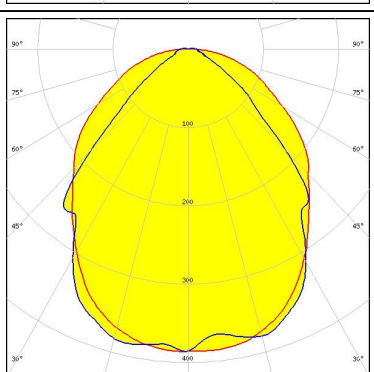
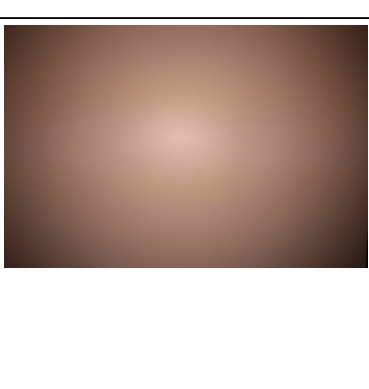
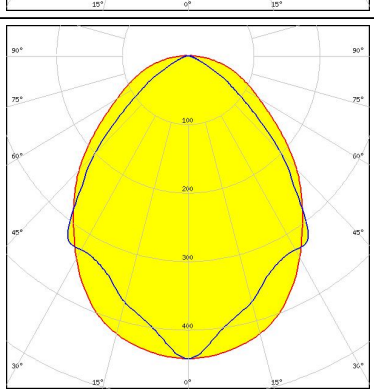
LED XP-E  
 FWHM / FWTM 104.0 + 88.0° / 164.0 + 126.0°  
 Efficiency 81 %  
 Peak intensity 0.4 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



LED L-iC-282-827-865-011A  
 FWHM / FWTM 102.0 + 89.0° / 164.0 + 124.0°  
 Efficiency 82 %  
 Peak intensity 0.4 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



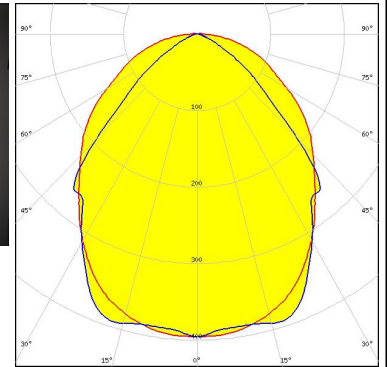
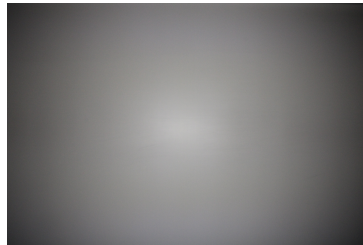
#### OPTICAL RESULTS (MEASURED):

<p><b>Helvar</b></p> <p>LED LP-282-840-009A 60/300            FWHM / FWTM 100.0 + 89.0° / 163.0 + 125.0°            Efficiency 82 %            Peak intensity 0.4 cd/m            LEDs/each optic 1            Light colour White            Required components:</p>		
<p><b>Helvar</b></p> <p>LED LS-282-840-011A            FWHM / FWTM 102.0 + 90.0° / 164.0 + 125.0°            Efficiency 81 %            Peak intensity 0.4 cd/m            LEDs/each optic 1            Light colour White            Required components:</p>		
<p><b>Helvar</b></p> <p>LED LX-282-840-023A            FWHM / FWTM 102.0 + 89.0° / 164.0 + 125.0°            Efficiency 82 %            Peak intensity 0.4 cd/m            LEDs/each optic 1            Light colour White            Required components:</p>		
<p><b>LUMITRONIX<sup>®</sup></b>  <small>High-Performance LED-Technologies &amp; Solutions</small></p> <p>LED LinearZ 280-112 Circadian TW            FWHM / FWTM 93.0 + 87.0° / 159.0 + 122.0°            Efficiency 84 %            Peak intensity 0.4 cd/m            LEDs/each optic 1            Light colour Tunable White            Required components:</p>		

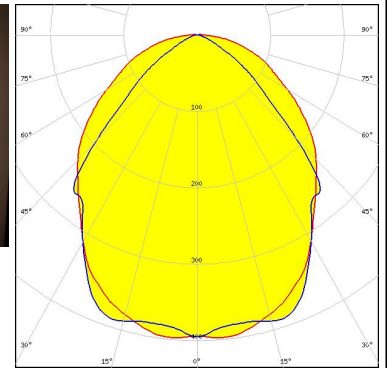
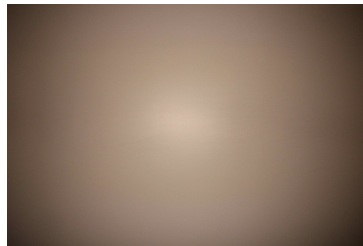
#### OPTICAL RESULTS (MEASURED):



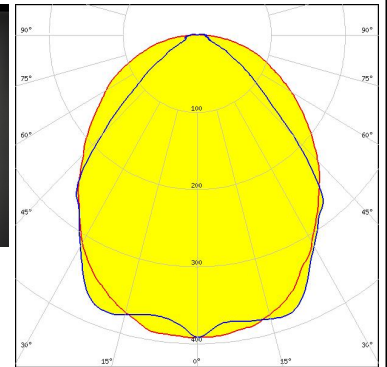
LED LinearZ 280-26  
 FWHM / FWTM 101.0 + 89.0° / 164.0 + 124.0°  
 Efficiency 83 %  
 Peak intensity 0.4 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



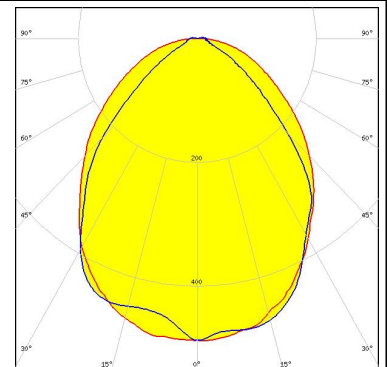
LED LinearZ 280-40 TW  
 FWHM / FWTM 101.0 + 89.0° / 163.0 + 123.0°  
 Efficiency 83 %  
 Peak intensity 0.4 cd/lm  
 LEDs/each optic 1  
 Light colour Tunable White  
 Required components:




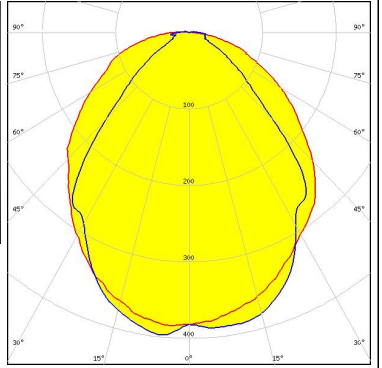
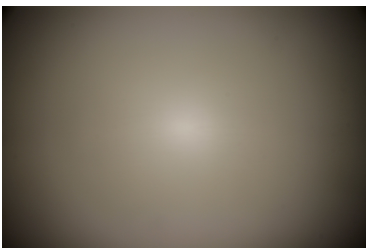
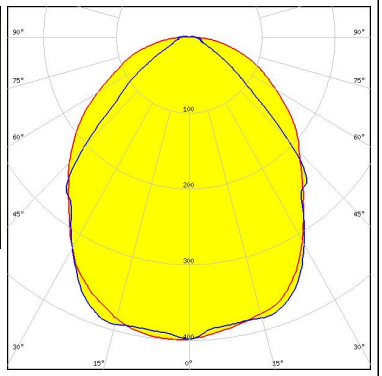

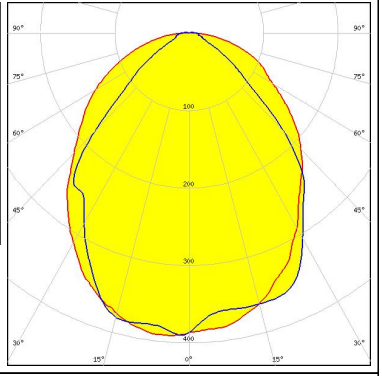
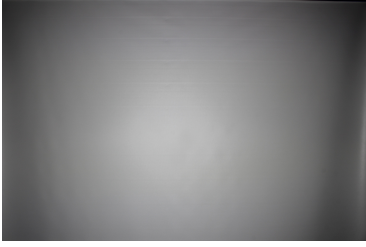
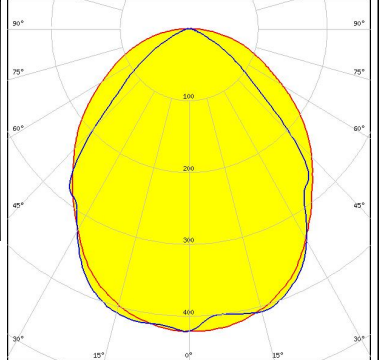
LED LinLED 280x24mm 1100lm 830 2C 30V LINNEA-GC G1  
 FWHM / FWTM 88.0 + 100.0° / 125.0 + 164.0°  
 Efficiency 83 %  
 Peak intensity 0.4 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



LED NF2x757D  
 FWHM / FWTM 86.0 + 99.0° / 125.0 + 159.0°  
 Efficiency 0 %  
 Peak intensity 0.5 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



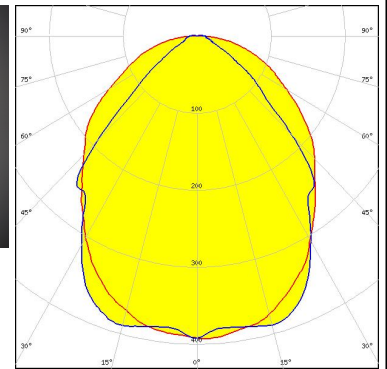
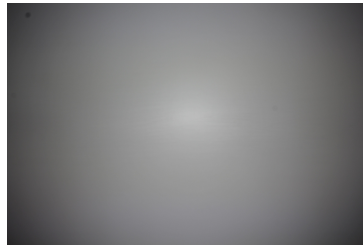
#### OPTICAL RESULTS (MEASURED):

<p><b>NICHIA</b></p> <p>LED NF2x757G            FWHM / FWTM 105.0 + 85.0° / 165.0 + 125.0°            Efficiency 83 %            Peak intensity 0.4 cd/lm            LEDs/each optic 1            Light colour White            Required components:</p>		
<p><b>NICHIA</b></p> <p>LED NFSW757H            FWHM / FWTM 100.0 + 90.0° / 163.0 + 125.0°            Efficiency 85 %            Peak intensity 0.4 cd/lm            LEDs/each optic 1            Light colour White            Required components:</p>		
<p><b>NICHIA</b></p> <p>LED NFSx757G            FWHM / FWTM 98.0 + 88.0° / 162.0 + 125.0°            Efficiency 81 %            Peak intensity 0.4 cd/lm            LEDs/each optic 1            Light colour White            Required components:</p>		
<p><b>OSRAM</b></p> <p>LED PL-LIN-IND-Z1 2800 560x24            FWHM / FWTM 101.0 + 89.0° / 163.0 + 125.0°            Efficiency 87 %            Peak intensity 0.4 cd/lm            LEDs/each optic 1            Light colour White            Required components:</p>		

#### OPTICAL RESULTS (MEASURED):

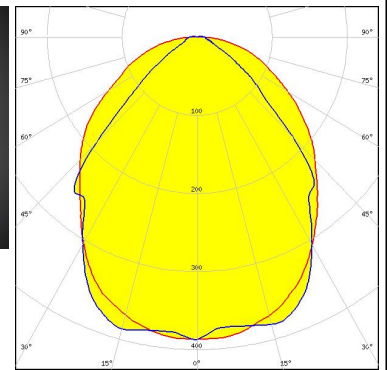
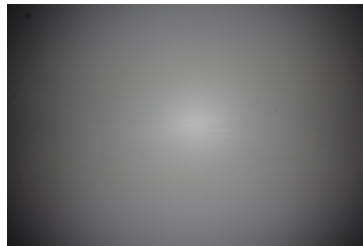
#### OSRAM

LED PL-LIN-Z5 1100 280x20  
 FWHM / FWTM 101.0 + 89.0° / 164.0 + 125.0°  
 Efficiency 82 %  
 Peak intensity 0.4 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



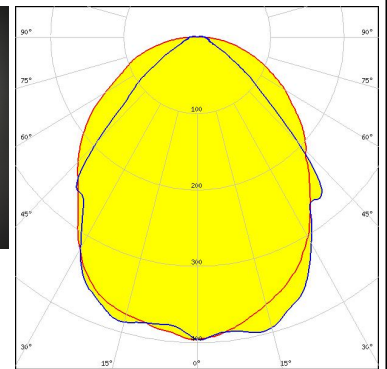
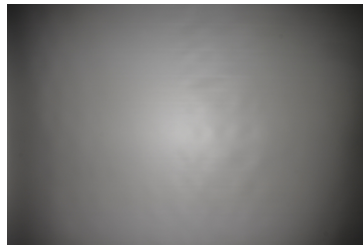
#### OSRAM

LED PL-LIN-Z5 2000 280x20  
 FWHM / FWTM 101.0 + 89.0° / 164.0 + 125.0°  
 Efficiency 82 %  
 Peak intensity 0.4 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



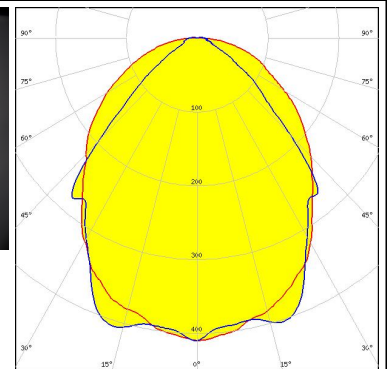
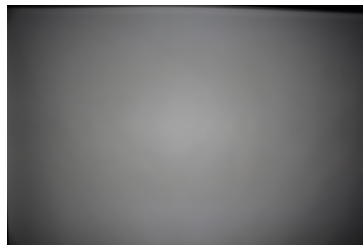
#### OSRAM

Osram Opto Semiconductors  
 LED Duris S5 (2 chip)  
 FWHM / FWTM 99.0 + 89.0° / 163.0 + 125.0°  
 Efficiency 83 %  
 Peak intensity 0.4 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



#### OSRAM

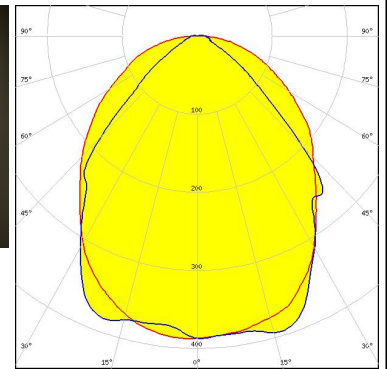
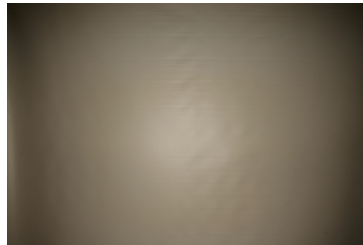
Osram Opto Semiconductors  
 LED Duris S5 (Single chip)  
 FWHM / FWTM 98.0 + 89.0° / 163.0 + 125.0°  
 Efficiency 85 %  
 Peak intensity 0.4 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



#### OPTICAL RESULTS (MEASURED):

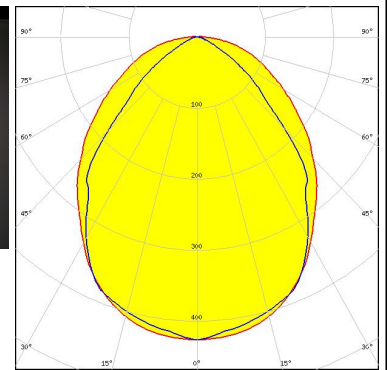
### PHILIPS

LED Fortimo LED Strip 1ft 1100lm FC HV4 & LV4  
 FWHM / FWTM 100.0 + 89.0° / 163.0 + 124.0°  
 Efficiency 82 %  
 Peak intensity 0.4 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



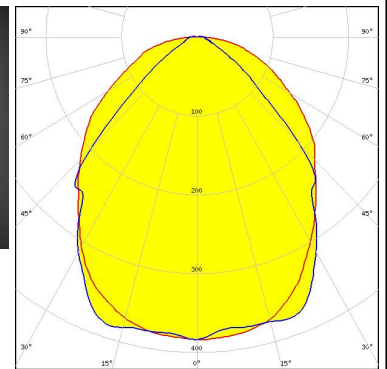
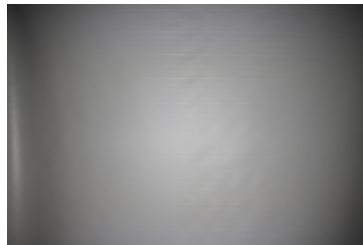
### PHILIPS

LED Fortimo LED Strip 1ft 1100lm FC HV5 & LV5  
 FWHM / FWTM 99.0 + 85.0° / 163.0 + 123.0°  
 Efficiency 86 %  
 Peak intensity 0.4 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



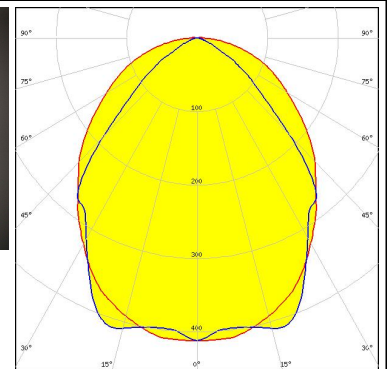
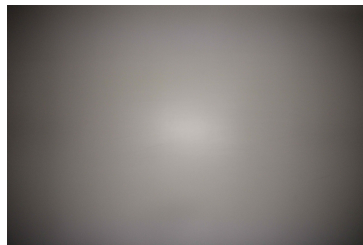
### PHILIPS

LED Fortimo LED Strip 1ft 650lm FC HV4 & LV4  
 FWHM / FWTM 102.0 + 90.0° / 164.0 + 124.0°  
 Efficiency 82 %  
 Peak intensity 0.4 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



### PHILIPS

LED Fortimo LED Strip 1ft 650lm FC HV5 & LV5  
 FWHM / FWTM 101.0 + 87.0° / 163.0 + 123.0°  
 Efficiency 86 %  
 Peak intensity 0.4 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:

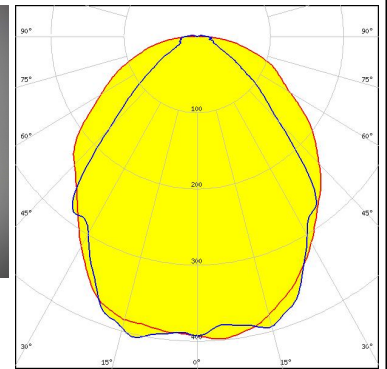




#### OPTICAL RESULTS (MEASURED):

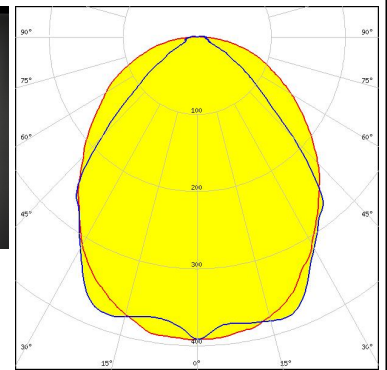
### SAMSUNG

LED LM28xB Series  
 FWHM / FWTM 105.0 + 86.0° / 165.0 + 124.0°  
 Efficiency 84 %  
 Peak intensity 0.3 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



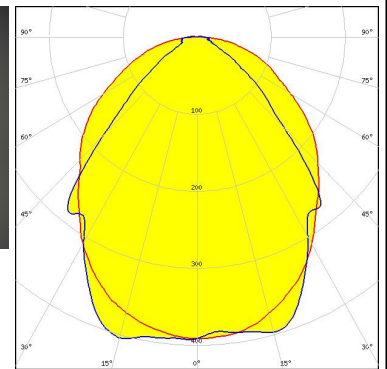
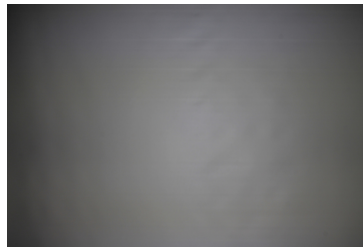
### SAMSUNG

LED LM561B Plus  
 FWHM / FWTM 88.0 + 100.0° / 125.0 + 164.0°  
 Efficiency 83 %  
 Peak intensity 0.4 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



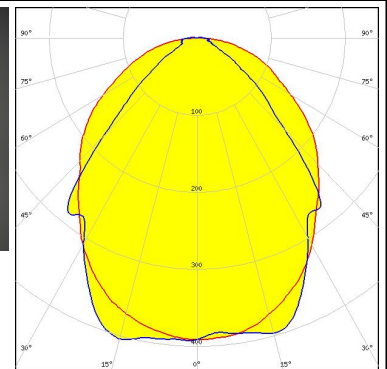
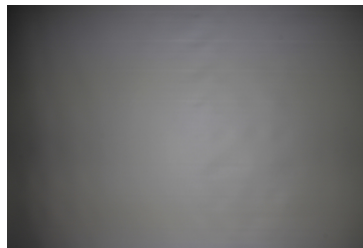
### SAMSUNG

LED LT-H282C  
 FWHM / FWTM 103.0 + 87.0° / 164.0 + 125.0°  
 Efficiency 84 %  
 Peak intensity 0.4 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



### SAMSUNG

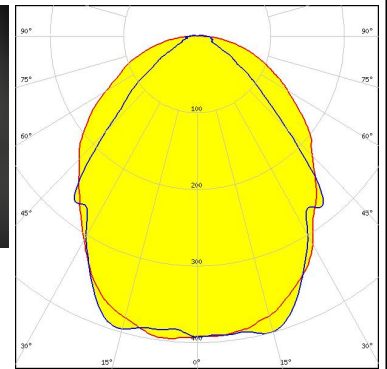
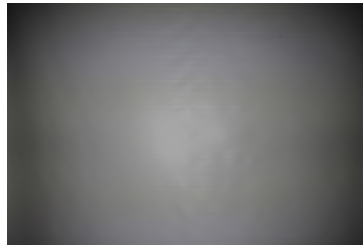
LED LT-H562C  
 FWHM / FWTM 103.0 + 87.0° / 164.0 + 125.0°  
 Efficiency 84 %  
 Peak intensity 0.4 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



#### OPTICAL RESULTS (MEASURED):

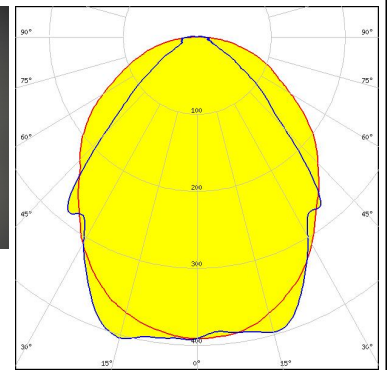
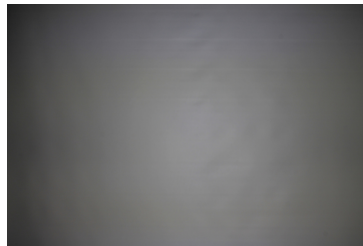
### SAMSUNG

LED LT-Q282B  
 FWHM / FWTM 101.0 + 87.0° / 164.0 + 125.0°  
 Efficiency 84 %  
 Peak intensity 0.4 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



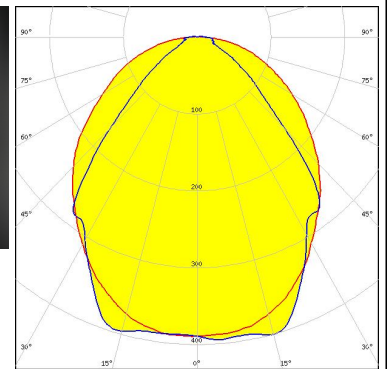
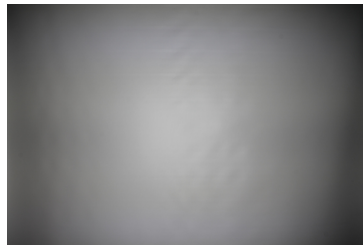
### SAMSUNG

LED LT-S282H  
 FWHM / FWTM 104.0 + 86.0° / 165.0 + 125.0°  
 Efficiency 85 %  
 Peak intensity 0.4 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



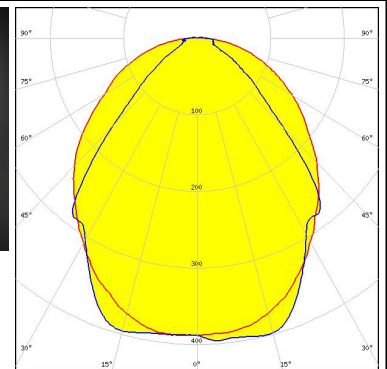
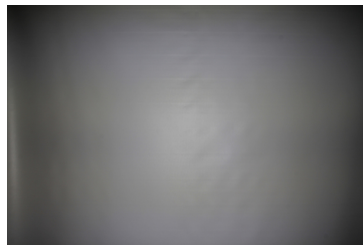
### SAMSUNG

LED LT-S562H  
 FWHM / FWTM 104.0 + 86.0° / 165.0 + 125.0°  
 Efficiency 85 %  
 Peak intensity 0.4 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



### SAMSUNG

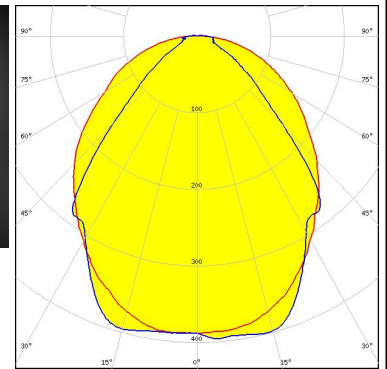
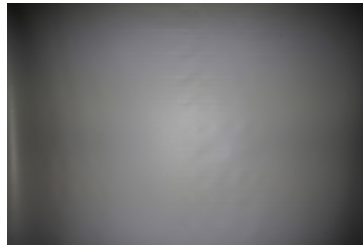
LED LT-V282E  
 FWHM / FWTM 103.0 + 86.0° / 164.0 + 125.0°  
 Efficiency 85 %  
 Peak intensity 0.4 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



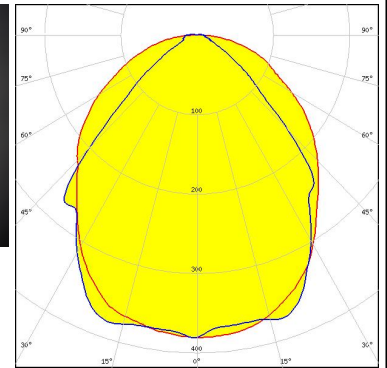
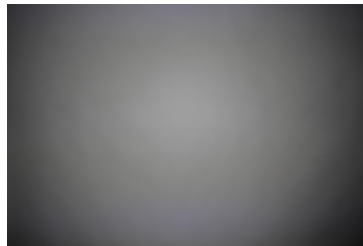
#### OPTICAL RESULTS (MEASURED):

### SAMSUNG

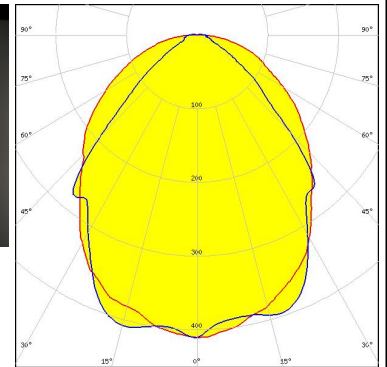
LED LT-V562E  
 FWHM / FWTM 103.0 + 86.0° / 164.0 + 125.0°  
 Efficiency 85 %  
 Peak intensity 0.4 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



**SEOUL SEMICONDUCTOR**  
 LED SEOUL 5630D  
 FWHM / FWTM 93.0° / 141.0°  
 Efficiency 82 %  
 Peak intensity 0.4 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:

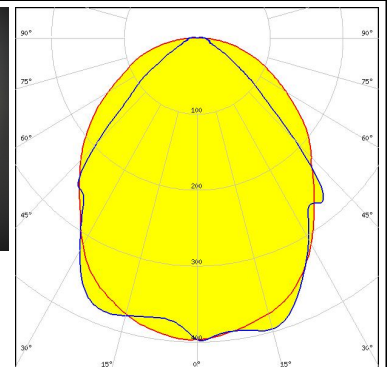
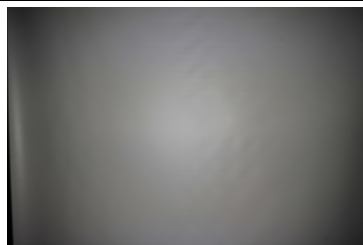


**SEOUL SEMICONDUCTOR**  
 LED SEOUL DC 3030  
 FWHM / FWTM 99.0 + 88.0° / 163.0 + 125.0°  
 Efficiency 85 %  
 Peak intensity 0.4 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



### TRIDONIC

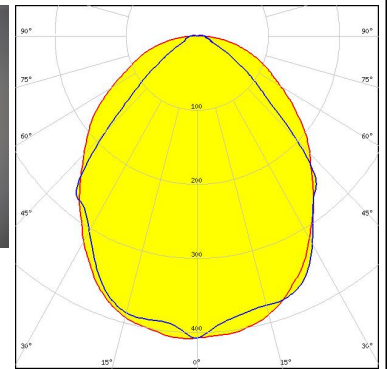
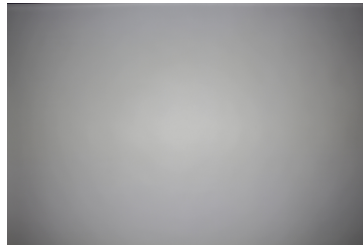
LED LLE G4 24x280mm 1250lm  
 FWHM / FWTM 100.0 + 89.0° / 163.0 + 125.0°  
 Efficiency 83 %  
 Peak intensity 0.4 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



## OPTICAL RESULTS (MEASURED):

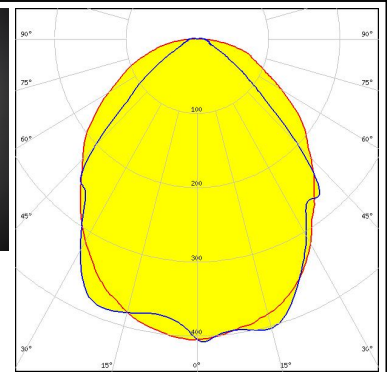
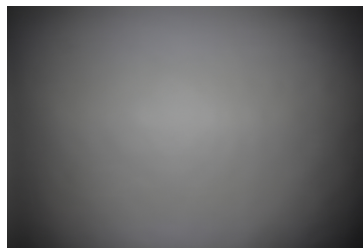
### TRIDONIC

LED LLE G4 24x280mm 2000lm ADV  
 FWHM / FWTM 98.0 + 88.0° / 162.0 + 124.0°  
 Efficiency 83 %  
 Peak intensity 0.4 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:

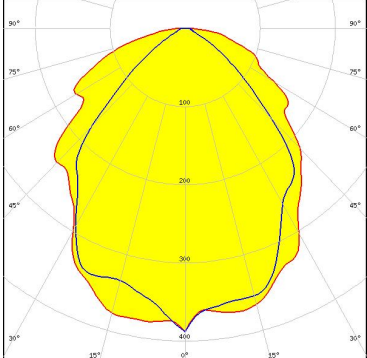
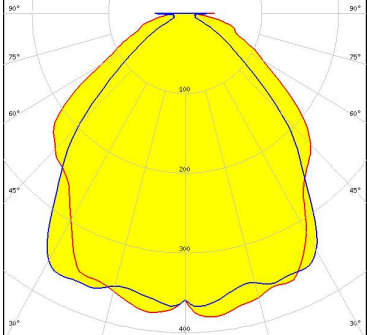
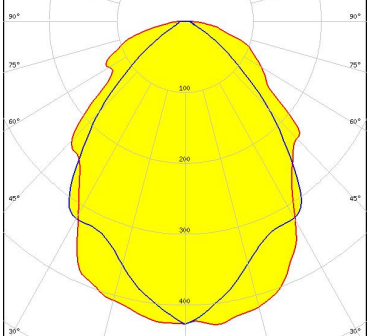
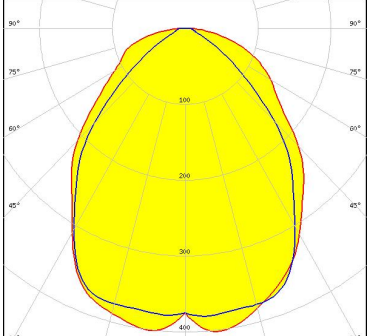


### TRIDONIC

LED LLE G4 24x280mm 650lm  
 FWHM / FWTM 99.0 + 89.0° / 163.0 + 125.0°  
 Efficiency 84 %  
 Peak intensity 0.4 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



#### OPTICAL RESULTS (SIMULATED):

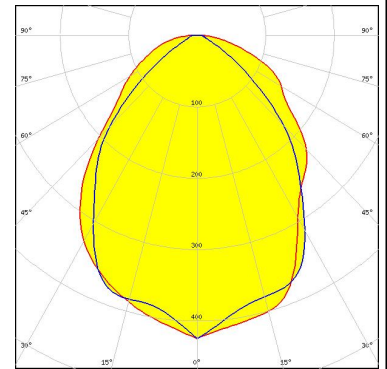
<p><b>bridgelux.</b></p> <p>LED: Bridgelux SMD 2835            FWHM / FWTM: 100.0 + 86.0° / 165.0 + 120.0°            Efficiency: 77 %            Peak intensity: 0.4 cd/lm            LEDs/each optic: 1            Light colour: White            Required components:</p>	
<p><b>CREE LEDs</b></p> <p>LED: XP-G3            FWHM / FWTM: 105.0 + 89.0° / 161.0 + 124.0°            Efficiency: 81 %            Peak intensity: 0.4 cd/lm            LEDs/each optic: 1            Light colour: White            Required components:</p>	
<p><b>LUMILEDS</b></p> <p>LED: LUXEON 2835 Line            FWHM / FWTM: 96.0 + 84.0° / 161.0 + 120.0°            Efficiency: 80 %            Peak intensity: 0.4 cd/lm            LEDs/each optic: 2            Light colour: White            Required components:</p>	
<p><b>LUMILEDS</b></p> <p>LED: LUXEON 3030 2D (Round LES)            FWHM / FWTM: 93.0 + 84.0° / 162.0 + 124.0°            Efficiency: 82 %            Peak intensity: 0.4 cd/lm            LEDs/each optic: 1            Light colour: White            Required components:</p>	

#### OPTICAL RESULTS (SIMULATED):

##### OSRAM

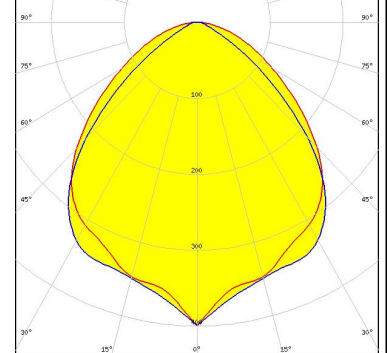
Opto Semiconductors

LED Duris E 2835  
 FWHM / FWTM 83.0 + 91.0° / 122.0 + 159.0°  
 Efficiency 82 %  
 Peak intensity 0.4 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



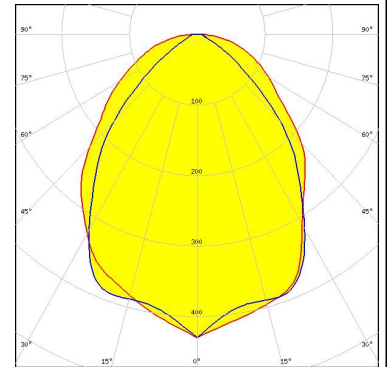
##### SAMSUNG

LED LM301B  
 FWHM / FWTM 98.0 + 92.0° / 152.0 + 126.0°  
 Efficiency 86 %  
 Peak intensity 0.4 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



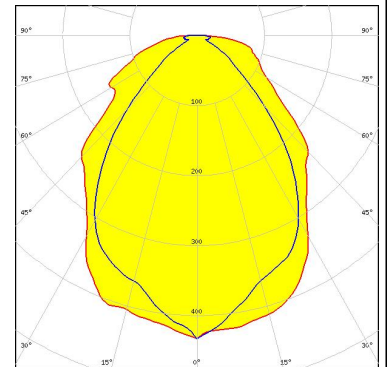
##### SEOUL SEMICONDUCTOR

LED SEOUL DC 3030C  
 FWHM / FWTM 91.0 + 82.0° / 160.0 + 120.0°  
 Efficiency 82 %  
 Peak intensity 0.4 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:

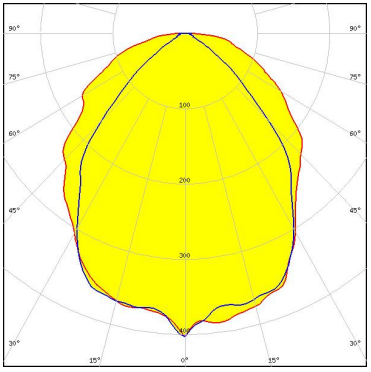
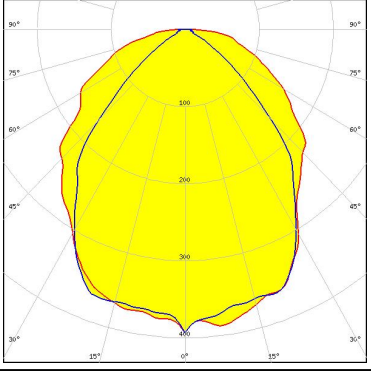
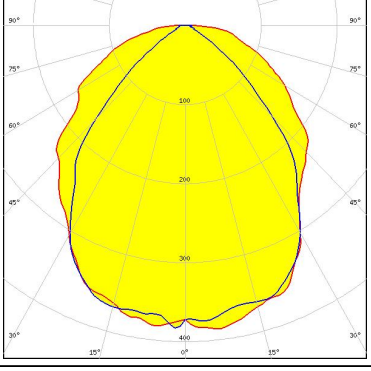
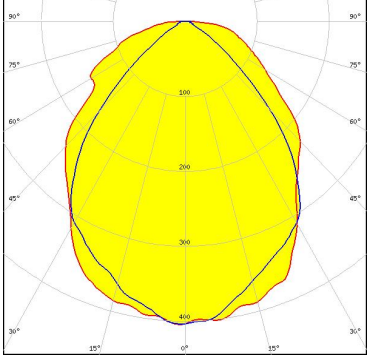


##### SEOUL SEMICONDUCTOR


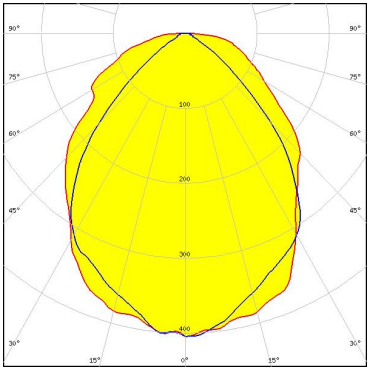

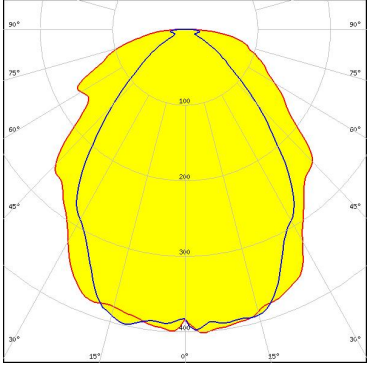

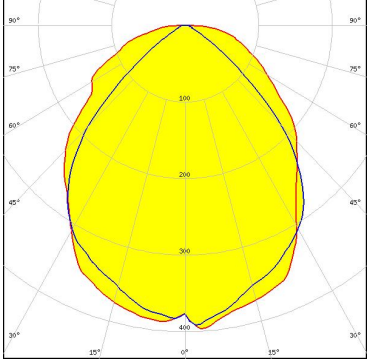
LED SEOUL DC 3528  
 FWHM / FWTM 95.0 + 78.0° / 169.0 + 116.0°  
 Efficiency 78 %  
 Peak intensity 0.4 cd/lm  
 LEDs/each optic 2  
 Light colour White  
 Required components:



#### OPTICAL RESULTS (SIMULATED):

<p><b>SEOUL SEMICONDUCTOR</b></p> <p>LED: SEOUL DC 3528</p> <p>FWHM / FWTM: 102.0 + 84.0° / 168.0 + 117.0°</p> <p>Efficiency: 77 %</p> <p>Peak intensity: 0.4 cd/lm</p> <p>LEDs/each optic: 1</p> <p>Light colour: White</p> <p>Required components:</p>	 <p>A beam spread diagram showing a yellow beam profile on a grid. The grid has vertical lines at 15°, 0°, and 15° from the center, and horizontal lines at 30°, 45°, 60°, 75°, and 90°. The beam is wider at the top and tapers towards the bottom. Concentric circles are drawn at 100, 200, and 300 units from the center.</p>
<p><b>SEOUL SEMICONDUCTOR</b></p> <p>LED: SEOUL DC 3528</p> <p>FWHM / FWTM: 102.0 + 86.0° / 169.0 + 118.0°</p> <p>Efficiency: 77 %</p> <p>Peak intensity: 0.4 cd/lm</p> <p>LEDs/each optic: 1</p> <p>Light colour: White</p> <p>Required components:</p>	 <p>A beam spread diagram showing a yellow beam profile on a grid. The grid has vertical lines at 15°, 0°, and 15° from the center, and horizontal lines at 30°, 45°, 60°, 75°, and 90°. The beam is wider at the top and tapers towards the bottom. Concentric circles are drawn at 100, 200, and 300 units from the center.</p>
<p><b>SEOUL SEMICONDUCTOR</b></p> <p>LED: SEOUL DC 3528</p> <p>FWHM / FWTM: 104.0 + 86.0° / 169.0 + 118.0°</p> <p>Efficiency: 77 %</p> <p>Peak intensity: 0.4 cd/lm</p> <p>LEDs/each optic: 1</p> <p>Light colour: White</p> <p>Required components:</p>	 <p>A beam spread diagram showing a yellow beam profile on a grid. The grid has vertical lines at 15°, 0°, and 15° from the center, and horizontal lines at 30°, 45°, 60°, 75°, and 90°. The beam is wider at the top and tapers towards the bottom. Concentric circles are drawn at 100, 200, and 300 units from the center.</p>
<p><b>SEOUL SEMICONDUCTOR</b></p> <p>LED: SEOUL DC 3528</p> <p>FWHM / FWTM: 99.0 + 84.0° / 167.0 + 117.0°</p> <p>Efficiency: 78 %</p> <p>Peak intensity: 0.4 cd/lm</p> <p>LEDs/each optic: 2</p> <p>Light colour: White</p> <p>Required components:</p>	 <p>A beam spread diagram showing a yellow beam profile on a grid. The grid has vertical lines at 15°, 0°, and 15° from the center, and horizontal lines at 30°, 45°, 60°, 75°, and 90°. The beam is wider at the top and tapers towards the bottom. Concentric circles are drawn at 100, 200, and 300 units from the center.</p>

#### OPTICAL RESULTS (SIMULATED):

<p> <b>SEOUL SEMICONDUCTOR</b></p> <p>LED: SEOUL DC 3528</p> <p>FWHM / FWTM: 99.0 + 84.0° / 167.0 + 116.0°</p> <p>Efficiency: 78 %</p> <p>Peak intensity: 0.4 cd/lm</p> <p>LEDs/each optic: 2</p> <p>Light colour: White</p> <p>Required components:</p>	 <p>A beam spread diagram showing a yellow beam profile on a grid. The grid has vertical lines at 15°, 0°, and 15° from the center, and horizontal lines at 30°, 45°, 60°, 75°, and 90°. The beam is wider at the bottom and tapers towards the top.</p>
<p> <b>SEOUL SEMICONDUCTOR</b></p> <p>LED: SEOUL DC 3528</p> <p>FWHM / FWTM: 100.0 + 80.0° / 170.0 + 118.0°</p> <p>Efficiency: 78 %</p> <p>Peak intensity: 0.4 cd/lm</p> <p>LEDs/each optic: 1</p> <p>Light colour: White</p> <p>Required components:</p>	 <p>A beam spread diagram showing a yellow beam profile on a grid. The grid has vertical lines at 15°, 0°, and 15° from the center, and horizontal lines at 30°, 45°, 60°, 75°, and 90°. The beam is wider at the bottom and tapers towards the top.</p>
<p> <b>SEOUL SEMICONDUCTOR</b></p> <p>LED: SEOUL DC 3528</p> <p>FWHM / FWTM: 99.0 + 88.0° / 166.0 + 118.0°</p> <p>Efficiency: 77 %</p> <p>Peak intensity: 0.4 cd/lm</p> <p>LEDs/each optic: 2</p> <p>Light colour: White</p> <p>Required components:</p>	 <p>A beam spread diagram showing a yellow beam profile on a grid. The grid has vertical lines at 15°, 0°, and 15° from the center, and horizontal lines at 30°, 45°, 60°, 75°, and 90°. The beam is wider at the bottom and tapers towards the top.</p>



### GENERAL INFORMATION:

NOTE: The typical beam angle will be changed by different color, chip size and chip position tolerance. The typical total beam angle is the full angle measured where the luminous intensity is half of the peak value.

### MATERIALS:

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